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Original

A CASE OF UNDESCENDED OVARY AND TUBES, WITH SACTO-SALPINX PURULENTA PROFLUENS.

By M. L. HARRIS, M. D.
Professor of Surgery Chicago Polyclinic.

Mrs. D., from a neighboring State, came to me in February, 1895, and gave the following history: Age, thirty-seven years; American, widow. At the age of thirteen years she began to menstruate.

Menstruation was normal, with the exception that the pain was always quite severe until her marriage at the age of twenty-six. She had a child one year after her marriage and a second one a year and a half after the first. No miscarriages.

She is a well-developed woman and, previous to her present trouble, always enjoyed good health.

Her illness dates back about seven years, when she was taken with severe griping pains in the abdomen, which was soon followed by vomiting.

There were two or three loose passages from the bowels, and then obstipation with considerable distention of the abdomen resulted.

The pain soon became localized in the right iliac region, where a distinct mass developed which was painful and tender, and which extended, according to her description, internal to and above the anterior superior spine of the ilium.

She had constant fever and was quite ill for about six weeks, when there was a sudden discharge of blood and pus per vaginam, after which she convalesced. She remained in fairly good health, with the exception of a little pain or soreness in the right iliac region upon exertion or straining, for about two years, when she had another attack similar to the first one.

These attacks recurred at varying intervals until the past year. For one year she has practically been ill all the time, having had five or six relapses during this time.

These attacks always began in the same manner. She had griping pain, gastric and intestinal disturbance, fever, swelling or tumor in the right iliac region, and was usually relieved by a discharge of pus through the vagina.

She had just recovered from one of these attacks when she consulted me. She was well developed, and

physical examination was negative until the right iliac region was reached. Here a roundish, oblong mass was distinctly palpable. Its long axis extended vertically and crossed a line connecting the anterior superior spine of the ilium with the umbilicus. About one-third of the mass lay above this line, and the remaining two-thirds below it.

Bimanual examination showed the uterus to be normal in size and mobility. No exudates could be felt in the pelvis. The vaginal wall was everywhere free, and no cicatricial tissue or adhesions were discovered, such as one would expect to find where an abscess had repeatedly discharged itself through this channel. As there was no discharge of pus at the time of the examination, and as the patient had not been seen at the time the discharge occurred, its exact point of exit could not be determined.

The absence, as stated above, of cicatricial tissue or adhesions about the vaginal walls made it probable that the discharge came through the uterus from the Fallopian tube. The occurrence, however, of a pyosalpinx or sactosalpinx purulenta which periodically discharges its contents through the uterus is extremely rare, and according to Martin, of Berlin (Die Krankheiten der Eileiter), the very few cases which have been reported recovered without operation. The clinical history, as given by the patient, corresponded very accurately with the history of chronic relapsing appendicitis. The periodical discharge of pus from the vagina seemed to favor a sactosalpinx purulenta profluens.

The mass corresponded so accurately in location and outline to such as are frequently felt in cases of chronic appendicitis, and the total absence on bimanual examination of pathological products in the pelvis, induced me before the operation to make a clinical diagnosis of chronic relapsing appendicitis.

A straight incision, such as is usually employed for the removal of the appendix, was made parallel to the right border of the rectus muscle and directly over the mass. Upon opening the abdominal cavity the cecum presented and was raised upward and displaced outward, thus bringing into view the appendix, which was quite diminutive in size. It measured but about three centimetres in length, was perfectly normal in appearance and free from adhesions.

It lay directly on the mass, which proved to be the right ovary and distended ampulla of the Fallopian tube. The mass presented the usual appearance of a sactosalpinx purulenta.

The dilated tube embraced the anterior surface of the ovary, and was firmly bound to it by adhesions.

The entire mass lay above the iliac vessels and entirely outside of the true pelvic cavity. The ovary rested on the psoas magnus muscle, its upper limit being opposite the bifurcation of the abdominal aorta.

The attachment of the ovary posteriorly, corresponding to the ligamentum infundibulo-pelvicum, was rather broad, and extending externally became continuous with the internal layer of the ascending mesocolon, and superiorly with the inferior layer of the mesentery of the lower end of the ilium. The ureter descended posterior to the ovary, and entering the pelvis, followed its usual course.

The ovarian artery entered the infundibulo-pelvic ligament at the superior and internal angle, and the pampiniform piexus spread out posteriorly and internally. The ovary was about normal in size and appearance and had no corpus luteum.

The ampulla of the tube was dilated to the size of an adult thumb and measured about eight centimetres in length.

The isthmus was much longer than normal, and extended across the pelvis to the uterus, which occupied its normal location. There were no adhesions about the caecum, but this organ did not descend quite as low as usual. The left ovary and tube occupied their normal location.

The right ovary and tube were ligated off in the usual way and removed. The patient made an uneventful recovery.

This case presents two points of interest:

1. An undescended ovary and tube.

2. Sactosalpinx purulenta profluens.

As is well known, the ovaries and tubes in the embryo at first extend high up in the abdominal cavity, reaching as high as and even being overlapped by the lower end of the lungs. From this high position they gradually descend during the process of development until they reach the position within the true pelvis which they are found to occupy in the adult.

This so-called descensus ovariorum is not an active process on the part of the ovaries and tubes, but is due rather to a more rapid or, perhaps, better, a disproportionate development of the other neighboring parts of the body, until at the end of the developmental period, and the rearrangement of the relations of the various organs, the ovaries and tubes are found to occupy a much lower position and one farther removed from the mid-line than at the beginning.

An arrest of development of neighboring parts, or the persistence of early forms, or the presence of unnatural adhesions of the ovary or tube, may lead to an arrest of the movements of these bodies at any point of their course, and thus bring about the condition of non-descent.

That the ovaries may be arrested in their descent at any point is a statement made by almost all authors treating of these organs; but it seems to be, like many another statement, simply copied and handed down from one author to another without anyone producing evidence in the shape of a detailed case to support it.

The literature on this subject may practically be said to begin with the excellent monograph by Puech on Anomalies of the Ovaries, published at Paris in 1872. Unfortunately, the original of this valuable paper was inaccessible to me, but from abstracts of the article found in the Rev. des sciences med., 1873, Virchow's Jahresbericht, 1873, and the Dict. des sciences med., we learn that it contained the complete literature of the subject up to that date (1872), with a detailed report of all recorded cases.

These—some thirty-eight in number—are mostly anomalies of number, size, etc. Two cases, however, by the author himself, are anomalies of location, the ovaries being arrested in the lower lumbar region similar to the case here reported, and to which Puech gave the name ectopie lombaire.

While this article may be said to begin the literature of the subject, it may likewise be said to practically end it, as little that is new or original has appeared since it. In quite an extensive review of the literature since 1872 I have been unable to find the report of a case similar to this.

Bland Sutton (Brit. Gynecol. Jour., 1887-'88, vol. iii, p. 372) reports a case of non-descent of the ovary in an infant with spina bifida which survived its birth but a few days.

The abdominal cavity presented evidences of extensive peritonitis, loops of small intestine were glued together, and the descending colon lay high up under the liver, firmly adherent to the ventral aspect of the right kidney.

The right ovary and tube were firmly fixed by stout adhesions just below the crest of the ilium.

Sutton suggested that perhaps the arrest of descent of the colon may have been instrumental in arresting the descent of the ovary.

This is the only case which I was able to find detailed, which will indicate, somewhat, perhaps, the rarity of the condition.

The second point of interest, the occurrence of a chronic purulent inflammation of the Fallopian tube, giving rise periodically to symptoms of acute peritonitis which disappear coincidently with a discharge of pus from the genital tract, is likewise rare while the combination of an undescended ovary and tube with sactosalpinx purulenta profluens I have not been able to find heretofore recorded.

A PRACTICAL STUDY OF THE BLOOD AND THE CIRCULATION, WITH A HISTORICAL REVIEW OF THE SUBJECT AND ITS BRIEF CONSIDERATION FROM THE STANDPOINT OF ITS CHEMICAL COMPOSITION, ANATOMICAL STRUCTURE, AND PHYSIOLOGY; INCLUDING CLINICAL STUDIES, AND EXPERIMENTAL RESEARCH ON THE LOWER ANIMAL.

BY THOMAS H. MANLEY, M. D., NEW YORK.

Continued from last number.

PART XIX.

LEUCOCYTES IN NUTRITIVE PROCESSES.

From what may be gathered through latest researches of investigators it is evident that though a wide diversity of opinion obtains on the question of the origin and ultimate disappearance of the colorless blood corpuscle, all are in accord in conceding to it an important place in nutritive processes, while some go so far as to give it a place of leading importance, in the genesis of inflammation. There is no doubt, however, but in some instances properties are assigned to it which it does not probably possess, or have prematurely and without repeated test observations submitted conclusions bearing on its metabolic properties which have not been substantiated.

Its identity with the pus-cell has been denied, though there are some who believe it to be a derivative, if not in fact, a lymph corpuscle, farther advanced in the process of evolution.*

Living lymph corpuscles we are rarely able to secure in the human body, but in order to decide this question a comparison of the two corpuscles, the lymph and colorless blood corpuscle, is desirable. During the past year an opportunity was permitted me to examine pure, watery lymph, direct from a serous cavity; when advantage was taken of the chance to critically study its protoplasmic elements.

A man, 34 years old, came to me suffering from a bronchial cleft, which had its opening two inches above, and to the outer side of the left nipple, in the third intercostal space. These fistulas, which commonly connect with the mucous walls of the pharynx and other parts of alimentary canal are seldom traceable through an endothelial wall. But in this case it was quite unmistakable. The papillary aperture would periodically open and freely discharge an amber colored fluid for a few days; saturating freely several absorbent dressings applied, when it would close again. There seemed to be a hypersecretion within the pleura, or a flattened accessory pouch lying anteriorly to it, and inasmuch as as the flow had discontinued several days, physical symptoms of effusion were present; besides, there was an uncomfortable sensation of oppression over that side of the chest. When the discharge again commenced there was immediate relief. That the effusion was not of an inflammatory origin was proved by his own clinical history, as well as by the morphological characters of the escaping fluid. He had been cognizant of the discharge for nearly two years, though it did not seem to affect his general health.

In order to collect it as free as possible from impurities the surface of the integument was cleansed, saturated with proof spirit and dried; then with a narrow tipped pipette, applied in the aperture, with pressure applied to the thorax

* T. A. Simmons, M. D., St. Louis, Mo., Leucocytes and Nuclei Hygienic Gazette, August, 1895.

from before backward, a few drops were pressed out and collected.

The microscopical adjustments were all so arranged that within half a minute from the time the lymph was collected it was under focus; care being observed to have everything warm and so support the cover-glass as not to unduly compress or injure the corpuscles. The atmosphere of the room was about 85 degrees and everything conducive to the preservation of the vitality of so-called "cell life." The first feature that struck me was the comparative scarcity of the lymph corpuscles. With a field in a one-fifth lens, which would contain many hundred blood corpuscles, only from six to twelve would appear. In one field, on one occasion, but three were found, though in another on the same day fifteen were counted. The next feature was their great size, easily three times as large as a leucocyte, and rather ovoid than circular in outline. They all had but a single nucleus with a very high refractive power and a clear cut border, which sharply separated it from the inclosed protoplasm. Their interior was exceedingly delicate, totally devoid of any granular elements or a reticulum. No movement in them was discernible. Their borders preserved their regular contour and no change could be perceived, until after a time, as the medium in which they floated began to evaporate, when a uniform shrinkage was observed before they finally broke up and became invisible. The lymph corpuscle, which must not be confounded with the "lymphoidal," found in the stroma or adenoid tissue, therefore, possesses characters unique, definite and characteristic. To confound it with the leucocyte is certainly an error, as it bears no resemblance either in form or in function.

The greater part of the leucocytes have but one nucleus. In my observations, in the living animal, the single, or Mon-nucleated, have equally active ameboid motion with those in which several indistinct specks are seen in the protoplasm that has led some investigators to have regarded them as polynucleated.

It has not been my purpose in these notes to enter on any recent controversional side of this subject of the functions of the corpuscular elements of the blood, as this would lead one off into an almost endless consideration of the details, but before concluding this feature of the subject there is one more feature of it, which has been lately pressed forward by those who would open for us the portals of a new pharmacy, and who make the extraordinary claim that all the nutrient elements of digestion are first taken up by the leucocyte; that this minute body is not only voracious and omniverous, but that all the elements of the food, must, as it were, be first predigested by it.

As it were to impose further on our credulity, it is declared that the nuclei of the leucocyte possess germ-destroying energy and in a very high degree is a vitalizing energetic tonic. It does not appear, however, that any means is yet known to science by which only the nuclei can be extracted from the leucocytes or by what means the leucocytes themselves can be separated from the mass of other corpuscles in which they blend. We have seen that they are exceedingly prone to immediate disorganization on removal from the vessel. But it is said that the pulp of the spleen, the thyroid and suprarenal bodies are utilized for the extraction of the "nucleins."

Michafavat, Bizzorzero, Erlrich, Hayem and a host of other distinguished hematologists candidly acknowledge that the source of the leucocyte is doubtful. My own studies on the fresh and stained section of the liver, spleen, thyroid and suprarenal bodies have never convinced me that any of them were directly concerned in the genesis of the colorless blood corpuscles. Nor is there a scintilla of proof that the proteids and hydro-carbons are primarily seized on and absorbed by the leucocyte in the process of digestion.

Physiologists are generally agreed that the lacteal and portal capillaries are the vessels exclusively concerned in the absorption of the intestinal contents, but the venous blood, as

we have seen, is not rich in leucocytes.

Besides, before the liquid ailment can penetrate the capillary walls of the absorbents on the surface of the stomach or the villosities of the small intestine several layers of stratified epithelia must be traversed, which must in some decisive manner influence metabolic changes in those elements now about to be appropriated by the economy.

We have seen that the capillaries advance to but not through the tufts of tubular epithelia which line the wall of the bowel. They are incessantly giving off and taking back the necessary ferment and other substances demanded in the chemistry of digestion.

The facts probably are—for a large element of theory must enter into the consideration of the subject—that all the liquid elements of the aliment pass changed and unchanged directly in the plasma of the blood, through which it is dealt with first not by the leucocytes but the glandular organs before it is assimilated, consumed and eliminated.

The assumption that the protoplasmic elements of the spleen, and the thyroid body, are the centres from which the nuclei of the leucocytes spring is not supported. The Malpigian corpuscles or tufts of the spleen and its stroma are thickly packed with what are designated lymphoid cells, bodies varying in diameters, shape and arrangement, closely allied with those of embryonic origin. The lymphoid tissue is also found in great abundance in the substrata of all epithelial and endothelial structures. We have no proof that these non-differentiated elements are any more concerned in the development of one variety of corpuscles than the other.

The thyroid is said by those who have made an extensive study of embryology to be primarily an epithelial structure; later, towards birth, undergoing changes into lymphoid elements, and, finally, as adult years are reached, undergoing central, myxomatous changes. From the profound constitutional changes which so commonly follow its excision, it has been quite generally believed that this organ is actively concerned in hematopoiesis. There is no evidence or demonstration forthcoming, however, to prove that from its cellular or nuclear elements the primitive granule of the colorless blood corpuscle is derived.

The leucocytes in pathological conditions, as general anemia, from constitutional disturbances and local lesions of a malignant character play an important role, and now, with the hematometer and facilities for staining no doubt may be studied with great advantage as a means of establishing diagnoses and forecasting results. Hematology in the near future will be the field to which clinicians must direct their observations for fresh and more definite light on many deranged phenomena of health. With the advance of our knowledge in this direction the more antiquated and uncertain methods of studying nature must be cast aside, for even now the revelations of modern hematology indicate that not only may disease be readily recognized but its advent anticipated. Laveran has demonstrated this in malaria, and there is every reason to believe that the time is not far distant when the same will be accomplished in all those diseases which have their origin in the blood elements.

Concluded.

(The continuation of Dr. Manley's articles on "The Blood" will appear in the next issue under the title of "Vascular Mobility and Statis; Arrest and Restoration of the Sanguinous Wave, Physiological and Pathological."—Ed.)

L'ONANISME CHEZ LA FEMME.

BY DR. POUILLET, FRANCE.

Translated from the sixth edition by Dr. F. E. Chandler.

(Continued from last Number)

CHAPTER IV.

INDICATIONS.

How diagnose onanism?

I acknowledge it is often far from easy. There is no absolute sign or pathognomonic symptom of this vice; nevertheless there are a number of points which, taken singly, have no signification, but which in their ensemble indicate clearly the existence of the solitary habit.

These signs I class under three heads. (A) General physical signs. (B) Intellectual and moral signs. (C) Local physical signs.

(A). A complexion pale, wan, dull and leaden; the eyes sad and troubled, pupils dilated and turned; the lids red, swollen, heavy, especially the upper ones; stuck together in the morning; bordered below with a brownish-blue semi-circle; a fixed and stupid gaze, directly downwards; rapid emaciation with no apparent cause; inco-ordination of movements; a more or less pronounced muscular feebleness, especially in the lumbar region; trembling of the limbs; night-sweats; the way of seating themselves; the position of the hands in bed and awake; an incomplete and disproportionate development; extreme nervous susceptibility; headaches, gastralgia, syncopes, etc.; sleep troubled by voluptuous dreams or terrible nightmares—these are the general physical signs.

(B) A kind of inexplicable, instinctive sadness, carried to taciturnity; a timorous character, unequal and morose, inclined to fits of anger; exaggerated bashfulness in the presence of parents and sullenness before strangers; unfitness for work; a treacherous memory; an obtuse temper; indifference to play and games requiring thought; exaggerated love of solitude; great laziness; a habit of prevarication; exaggerated friendship for some playmate—these are the intellectual and moral signs.

(C) The premature development of the external genitals; the rupture of the hymen, occasionally; abnormal moisture of vagina and vulva; gaping, dilation and abnormal color of these organs; leucorrhea; elongation and morbid sensitiveness of the clitoris where excoriations are often found; finally foreign bodies of all kinds and shapes usually found in the bed, hidden under the mattresses, constitute the semiology of this group.

"How often," writes Reveille-Parise, "have we attributed diseases caused by onanism to causes suggested by the patient, who is interested in deceiving us!

"How many times have I abstained from asking questions on subjects that no parent likes to hear, and which some would consider an outrage!"

The physician should not allow himself to be influenced by categoric denials even; his duty commands him to insist, when he feels sure that he is on the right track. Only too often he is unintentionally misled.

Mothers can, with the greatest difficulty only, be made to see the faults, much less the vices, of their offspring.

"Usually, too confiding and too credulous," say Lachaise, "parents either trust in the probable effects of the moral and religious education their children have received, or are but too willing to imagine that the innocence of their daughters shields them from all corruption and, consequently, recognize the evil only when it has made immense progress."

A few years since Dr. Baraduc discovered a new sign of manualization that is almost positive. Unfortunately, this sign exists only in those who have been wounded, amputated or burned; in short, those who have

a solution of continuity of the integuments.

According to Dr. Baraduc, in those wounded who masturbate, a little pimple, a white point of little prominence, forms on the new cicatricial tissue. It is a little vesicle containing a viscous material, and raises up the newly-formed epithelium. After 24 to 36 hours, this membrane ruptures and leaves an irregular ulceration, the bottom of which is grayish or yellowish, its sides clean cut and usually covered with the material that is at the bottom of the ulcer.

These ulcerations may be either single or multiple, and usually disappear in 48 hours, the wound cicatrizes and remains so for a few days; then, suddenly, a new ulcer makes its appearance. This intermittence indicates the suspension and resumption of the onanistic maneuvers by the patient.

Dr. Baraduc brings eight cases to support of his proposition. We shall reproduce the first and last of these, asking the reader to pardon their length because of their great interest and the value of their details.

"A young girl, 12 years of age, constitution sound, fresh, in good health, and not lymphatic, is thrown down by a carriage and has her leg broken at the juncture of the lower and middle thirds. There is a wound 5 by 2 cm.; anteriorly the bone is bare and several splinters are detached. Scultet's apparatus is used to maintain the fracture; every day the wound is dressed; the coincident swelling and inflammation are treated with cold compresses. Three weeks after the accident, inflammation having disappeared, three little splinters are removed. The fracture unites normally and the wound cicatrizes.

"After the seventh week the wound is replaced by a scar 4 cm. long by 2 cm. broad; its color is dark violet.

"I intended to give her crutches two days later, but was diverted from my purpose by an ulceration 2 mm. in diameter, situated upon the edge of the scar.

"The bottom of this ulceration was covered with a very thin layer of an adherent, slightly sticky material, the color of which was pearl gray, slightly tinged with yellow.

"The edges are 1-2 mm. high and formed by the cicatricial pellicule only; they are clean-cut, like Hunterian chancres, without relief and without particular discoloration of the surrounding scar. Two or three mm. from the ulcer were two tiny granulations, barely projecting from the newly-formed epithelium; one of these, the smaller, was grayish-white, and the other grayish-yellow; the next morning the pellicle was ruptured, two ulcerations exist—purgatives, dressing with aromatic wine, quiet. I tell my little patient that she must not expect to get up before the three ulcers are cured.

"Four days later the first ulcer has healed; the others followed suit two days later, leaving scarcely a trace of their existence.

"Crutches were now given the little girl, who took a few steps around the ward, happy at the thought of soon leaving the hospital. Nevertheless, her strength did not return; her face was pale and slightly bloated. Two days after she had commenced walking I examined the leg, which was swollen about the ankle; then glancing at the scar I saw a fresh ulceration of the same character as the precedent, situated in the very centre of the cicatrix. Being ignorant of its etiology, I attributed it to the exercise of the preceding days, and prescribed quiet and renewed dressing with aromatic wine.

"The next day a group of four or five little vesicles form, close to and within the first ulceration. The granulations resemble closely millet seeds placed under the transparent epithelium. Twenty-four hours later they form as many irregular ulcerations, united to the primary one, and presenting in miniature the appearance of a phagadenic ulcer.

The skin is dry, the pulse irregular and nervous, the face is pale, the eyelids slightly swollen, the pupils strongly dilated, even in the light. For the first time the idea struck me that my patient gave herself up to certain habits that could well be

the cause of the frequent and irregular appearance of all these ulcerations. I talked and reasoned with her, then, after having frightened her a trifle because of the reappearance of the little sores, I said, fixing my eyes upon hers: 'My dear child, I am no longer ignorant of the cause of all these ulcerations, and you can never get well, for you have a bad habit that will prevent it; you carry your hands * * * where you should not. You have done so inside of twenty-four hours. I see it from your scar. * * * You have been doing this a long time, have you not?' 'Oh, no, sir! Only three times,' said the poor girl, blushing deeply.'

"After this avowal, I reassured her and calmed her fears, saying: 'Now, see here, my dear child, do you wish to get well and leave the hospital or to remain in bed all your life and perish miserably? * * * It is all dependent upon yourself.' A few tears flowed, and these were followed by a full confession.

"I insisted upon a promise not to recommence, and so great was her desire to get well and leave the hospital, that she said, with the greatest ingenuousness: 'I really do not know if I shall have the strength of mind necessary to keep my promise; have my hands fastened, it is safer.

"With her consent, I put on a straightjacket, and arranged the hands so that she could carry them to her head and chest, but not below the waist.

"Twelve days long the hands were fastened this way, the scar of the wound consolidated, the ulcerations cured and the little patient seemed firm in her resolve. Eight days more pass the same way, and then—fresh ulcerations!

"One at each angle of the scar. Evidently the child had had herself freed for some legitimate purpose, and then profited by the opportunity! —nothing of the sort; the child denies it; her hands have not been free one single instant; she has not been able to use them for the forbidden purpose. * * * She cries and acknowledges nothing. The patients around her confirm what she says. Nevertheless, the proof is there, doubly confirmed by the ulcerations. To what attribute their existence? To a particular state of the blood? To some diathesis? I could not admit this, for on entering the hospital the child had every appearance of perfect health and a sound constitution.

"Being especially anxious to have this point settled, I asked the nurse to take especial notice. A few days later at 8 o'clock P. M. the nurse came to me and communicated her suspicions.

"We went to the patient and found her asleep, so, without awaking her, we suddenly removed the bed clothes. She was lying on her back, with her arms fastened, but with her right leg firmly flexed upon the hip, and the toes of her right foot braced on her left thigh, thus bringing the right heel above the pubic region.

"The child was not yet nubile; no sign of puberty was visible on the pubes; but the whole pubic and subpubic region was dotted with little drops of blood, and looked like a blister, with its pseudo-membranous covering freshly torn off.

"What an amount of friction must have been used to bring about such a condition of things! What an aberration of sensation was necessary in order to pursue pleasure through so much pain! Is this not a fact that shows pleasure and pain to be two sensations whose extremes blend?

"We respected the sleep of the poor child, and it was the next day, and with the nurse as the only witness, that I showed the little patient the necessity of submitting to a treatment that would absolutely prevent her from giving up to the fatal habits. After a hearty assent the legs were extended and fastened, after being widely separated.

"Eight days sufficed to cicatrize an ulcer 15 mm. in diameter, formed by the union of several simple ulcerations. The little girl, more than ever desirous of overcoming her dead-

ly habits, remained a fortnight longer fastened to her bed. During this period all traces of ulceration disappeared; her health became excellent, and the convalescent quitted the hospital full of good resolutions for the future.

"Case,the Last—A handsome young girl, 12 or 13 years of age; brunette, black-eyed, of sound constitution, but excessively slender, was brought to my office on account of a phlyctenoid burn on the back of her left hand.

"This burn, which had been caused by boiling water, was six days old. The epidermis had disappeared, but the wound showed some signs of cicatrization at its circumference. It was dressed, with sweet almond oil and lime water. Four days later the scar covered two-thirds of the wound.

"A cicatricial island also occupied the centre of it. In the middle of this appeared a granulation, of yellowish-gray color, one mm. in diameter, and resembled a millet seed placed under a transparent epithelium. Several other granulations appeared on the borders of the wound, and soon produced by their degeneration the characteristic ulcerations.

"According to her mother, the young girl had been unwell for some time, and had been unsuccessfully treated for various affections of the lungs and viscera; since six months especially, she said, her daughter had grown thin with alarming rapidity. In fact, her cheeks were hollow, her cheek-bones prominent, her zygomatic arches strongly in relief below the temporal fossae. The child had grown sad, her eyelids were swollen, her pupils largely dilated; a slight dry cough, accompanied by frequent palpitations, had existed for some time; she was excessively irritable and dyspeptic; her pulse was feeble, frequent and irregular; diarrhea had existed for a few days. It was the beginning of the end!

"The mother was in despair; she adored her daughter. The daughter wept upon seeing the tears of her mother. Profoundly touched by this situation. I ausculted and examined most carefully all the splanchnic organs, and finding nothing that explained these accidents, I was convinced that I had before me a terrible example of the deadliest effects of nymphomania. The existence of the ulcerations did not allow me even a doubt.

"The mother could neither believe nor share the ideas I communicated to her; she revolted against the suspicion that at first only hovered over her daughter; then she energetically denied the possibility of the fact that I affirmed. The thing was not even probable; she did not leave her child either by day or night, she accompanied her into the most private places; it was, therefore, materially impossible.

"I asked the good woman to leave me alone with her daughter, and then explained the situation to the little girl, insisting, among other things, upon her mother's grief at having her so ill.

"The poor child clung feverishly to life: 'I do not wish to die,' she said. 'Still, I know perfectly, that I have not long to live!'

"I next spoke to her of her ailments, and told her that I was acquainted with their cause, and that, if she wished to have me help her out of her plight, there was no time to lose; that it was still possible, but she must have absolute confidence in me, and not even conceal those secrets that she kept hidden from her mother.

"After numerous hesitations, mingled with many tears, I learned that, in spite of the incessant surveillance of her mother, who did not leave her for an instant, and even slept with her, she succeeded in eluding her vigilance. Here are the facts as she gave them to me: 'I go to bed first and pretend to go to sleep very soon; I even snore a little to reassure my mother and make her think I am sleeping; but I am not. I listen, and as soon as I am sure that my dear mother is sound asleep, I yield to my deadly habits. In the morning mother finds me asleep, the forehead covered with perspiration, or very much fatigued when awakened. I

am very sorry to see her so grieved, but that does not keep me from recommencing, although always promising myself that it shall be the last time.'

"I was authorized to make a confidant of her mother, who could not have been more dumbfounded by the lightning striking at her feet than she was at this.

"From now on the child wore a jacket with a single sleeve and no opening.

"The love of life gave her courage to resist her inveterate desires; her mother's surveillance became inevitable and more efficacious; the bad symptoms disappeared. Baths, massage, moderate exercise, roast meats and old Bordeaux became powerful auxiliaries.

"Health came back, the burn cicatrized promptly, the ulcerations disappeared, never to return. Strength returned with her flesh, and this child, instead of dying, regained in a few months, thanks to the energy with which she resisted her passions, her magnificent health and ravishing beauty.

"Her burn saved her life!" (1)

CHAPTER V.

CONSEQUENCES.

Georget (2) believes that the authors who have written on onanism, and Tissot especially, have vastly exaggerated its dangers.

F. Roubaud (3) says in the same sense: "Every author who has taken masturbation for his subject has painted the ills resulting from it in the blackest of colors.

"Tissot's work is a classic in this respect.

"If it were not out of my line, it would be an easy matter to prove how exaggerated, useless, and even dangerous, these deductions are. The strict truth is hideous enough, without its being necessary to adduce purely imaginary troubles."

I myself am far from being of the opinion of these authors, but without wasting time in refuting unsupported statements, I will place the opinions of Reveille-Parise and Lallemand in opposition to theirs.

"In my opinion," writes Reveille-Parise (4), "neither the pest nor war are more disastrous to humanity than the deadly habit of masturbation. It is the destroying element of civilized society. I am acquainted with no worse scourge nor more contagious epidemic than this social corruption, for the number of people addicted to it from their earliest youth is simply immense."

Lallemand says: "Those who have accused Tissot of exaggerating the truth, of having missed his point, and even of having done more harm than good, have either been very unjust or else spoken without a knowledge of their subject. I have several times seen inordinate masturbation followed by death, and the numerous confessions I have heard from reformed onanists have convinced me that no book of its kind has been more useful to the young."

This point settled, a question now presents itself that must not be passed by in silence: Are the results of onanism the same as those of natural venereal excesses, or more serious? I do not hesitate to affirm the latter, and should I be asked my reasons, I will quote this reply of Londe's, which is correct in every particular:

"It is because onanists have better chances to provoke the venereal spasm than persons given to excessive coitus, since they need only to be alone for a moment.

"In addition to this, the encephalon is in a prodigious state of tension, and an exciting cause being wanting, is forced to create one in order to experience the venereal sensation."

A second question is this: Does a woman feel in the same degree as a man the pernicious effects of coitus and of masturbation?

In spite of the great scientific knowledge of the author I have just quoted, and who answers in the negative, I must differ from him.

It is a matter of common knowl-

(1). De l'ulceration des cicatrices recentes symptomatique de la nymphomanie ou de l'onanisme.
(2). Physiologie du systeme nerveux.
(3). Loc. cit. p. 556, vol. II

(4). Revue medicale.

edge that prostitutes do not suffer from excessive coitus because, by an act of their volition, they can rid themselves of participation, both corporeal and moral, in the sexual congress. In onanism it is different; this has, whatever be the methods employed, but one aim, that of venereal pleasure; therefore, we must admit that in both sexes masturbation will cause morbid processes, and these will be more marked in the female because of the predominance of nerve force in her composition.

If we admit this, I shall proceed to speak of the results of genital masturbation.

These are: (A), Local; (B), General.

(To be continued.)

Editorial

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ON ANCHYLOSED JOINTS.

Before the late meeting of the orthopedic section of the New York Academy of Medicine Dr. Wisner R. Townsend presented a brief essay on "Brisement Force as a Means of Treating Fibrous Anchylosis of Joints."

While he entered but superficially on the great diversity of pathologic conditions, local and general, which led to articular stiffness, and considered only rheumatoid arthritis, yet what he said on therapy was of importance to be remembered, coming from one of his large experience as an orthopedic surgeon.

He cited eleven cases of firm anchylosis in the various major articulations, resulting from intra and extra-articular inflammation, which he had treated by immediate and violent force, under ether, in liberating the adhesions.

In nine so treated and then massaged, etc., complete relapse followed, and in a short time all the joints were as firmly locked as ever. In two of the eleven some slight improvement followed, but in none full restoration of function. In the discussion which ensued one member stated that gonorrheal arthritis generally left the joint involved permanently anchylosed. But this is certainly a mistake, for of the many arthritic lesions of this character which have come under our observation restoration of joint power has been the rule.

What was most gratifying and commendable were Dr. Townsend's honesty and candor, a general imitation of which is just now sadly needed in the profession. A member of the section said that within a week he had heard a professor of surgery in one of our colleges declare before a class of students, many of whom will graduate in a month, in exhibiting a case of multiple joint anchylosis—three of the major articulations being solidly fixed by an old rheumatoid arthritis—that it was a simple matter to cure all these cases by brisement force. He would liberate all these joints under ether and there would be no further trouble. This advice the speaker regarded as vicious, unwarranted and dangerous, which would leave a delusive impression on the students, inasmuch as anything like a cure is quite

out of the question in all but very rare cases of this description.

The greater number of cases of anchylosis are not in consequence of infections or constitutional maladies, as gonorrhea, tuberculosis or rheumatism, but are the results of local injuries, as fractures, dislocations and various degrees of sprains. These, with few exceptions, may be remedied by appropriate treatment; and to this phase of the subject we would especially direct attention.

In this class of cases, whether liable to be followed by pseudo or generic anchylosis, the fundamental element of success is prevention.

There can be little doubt but many a case of non-articular rheumatism or of simple joint-sprain is doomed to a hopelessly crippled state for life through a mistaken diagnosis or misdirected treatment.

This is particularly the case with the hip and knee joints in children. In many children the joints are singularly susceptible to inflammation after trivial injuries. Such a condition, succeeding hip-trauma, when severe, is only too often set down as "hip disease." Forthwith the entire limb is encased in fixative apparatus, all muscular action is suppressed, the circulation embarrassed and the arrest of growth in the imprisoned member begins.

Rheumatism often pursues an erratic course in children, as is evident from the common cardiac complications, the usual sequellae, and the occasional advent of it in one articulation only. Too many of such cases are treated as incipient, osseous or arthritic tuberculosis, the joint locked under plastic dressings or mechanical apparatuses, the inflammatory deposits are held in place and their resorption is made impossible, when a solid welding together of all the extra articular structures, as tendons, ligaments and muscles, occurs.

In this class let the medical attendant always guard against the premature employment of any description of fixative appliance until the "therapeutic test" has been faithfully and patiently tried. No harm can possibly result from moderate delay, but irreparable harm may ensue through the adoption of any local adjustment which imperils the nutrition of the limb.

In fractures at times the quality of the lesion itself may establish the groundwork of certain grades of anchylosis that cannot, by any means known to art, be entirely obviated; as those at the elbow, at the wrist in typical Colles or at the ankle in bad cases of potts.

Lucas Championniere has lately, in a treatise on fractures, gone so far as to recommend passive motion in nearly all types of simple fractures as early as the third day, directing the patient with a fracture of the lower extremity to move about on crutches at the earliest possible date. His views on early manipulation are too extreme, but the principle which he champions is, no doubt, the proper one, for his object is to prevent anchylosis and favor reparative processes. Truly too many joints are anchylosed by too long immobilization in fracture treatment.

In bad sprains, as soon as active inflammation has subsided, passive joint motion should be commenced. But in order to abort the violence of such inflammation in all severe sprains, local antiphlogistics should be employed. Free leeching or cold applications favor the prevention and dissipation of extreme engorgement, and hence less probability of subsequent intense reaction.

Rude, violent force will seldom accomplish much in many cases of old anchylosis; but in recent ones, especially those in which we have reason to believe the adhesions are along the muscle planes, between their sheaths or the thecal envelopes of the tendons, as after various fractures, properly directed force will at once liberate everything and as a rule leave the joint free.

But, as observed in the beginning, the cardinal aim of the practitioner should be prevention. This is practicable in those cases of local origin. In those succeeding constitutional conditions, like brisement force, it will practically accomplish nothing.

A STEP IN THE RIGHT DIRECTION.

We are informed that The Ladies' Home Journal, of Philadelphia, has decided to refuse to publish any advertisements which pertain to medical, remedial or curative agents on the ground that they are unwilling to assume the responsibilities, slight though it may be, of the claims of proprietary advertisers. Were the daily press and monthly literary magazines to follow in the line of this good work, what a purifying of the atmosphere there would be! The patent medicine man would be obliged to seek a sale of his goods through such channels that would stamp him as a fakir at once, and good legitimate products would have recognition through the legitimate medical press, and there would be added subscribers to the literary journals.

NATURAL IMMUNITY.

The nature of the human organism, when in good condition, is to resist the invasion of disease. In other words, the healthy blood will offer no field for the development of maladies. Ill-health begins with a process of disordered nutrition, involving a stasis of correlative circulation, due to an insufficient supply of some one or more of the elements of the blood. Especially is this fact a source of danger in the presence of germ diseases. For instance, we will observe in phthisically inclined persons a loss of oxidizing elements, particularly a wasting of the phosphates, before the advent of any bacillus. We must recognize the ever-present germ, so called, in all the environments of the human being. They are in the air we breathe, the water we drink, and even in the blood which vitalizes our bodies. When the channels of exit for excrementitious substances are unimpeded, these bacteria pass out of the system without causing harm. The current of the circulation being rapid in its metamorphoses, the oxygenation of the tissues being perfect, many kinds of bacteria may be present without finding lodgment or suitable soil for their propagation. This is the essential of natural immunity in the system.

From the study of natural chemism we know that all change of material within the organism depends on the energy of intercellular oxidation, and in this way we are protected from deleterious substances. The obvious method of inducing artificial immunity, then, is first, by relieving obstructed correlative circulation, and, second, by augmenting natural immunity by supplying substances which improve oxidation of the tissues, thus vitalizing the blood-cells.

PROFESSOR ROENTGEN'S DISCOVERY.

No aid to diagnosis has ever been discovered which will prove so valuable to humanity and medical progress as that recently brought out by Professor Roentgen, if his new method of photography gives the success it now promises.

Photography of the bones through the overlying muscles and fleshy layers of the body is a subject, the execution of which has been little dreamed.

The experiment has been recently repeated with success by Professor Trowbridge, of Harvard College, who terms the phenomenon a "Shadowgraph," the bones of his own hand being reproduced in outline on the plate through the means of cathode rays.

Professor Neusser, of the Virginia University is said to have been able to thus photograph a renal calculus in the pelvis of a kidney by Roentgen's system.

The process of applying this experiment is said to have been somewhat as follows:

A very sensitive Cramer dry plate about four inches long and one and one-half inches wide was put, film side up, into a wooden box, having a close-fitting sliding wooden cover. Upon the sensitive plate were laid two clear glass slips, less than one-sixteenth of an inch thick. A space was left between them about four inches long and one-half an inch deep. Across the glass slips to hold them in place was put a narrow bar of pine wood five-sixteenths of an inch thick. The wooden cover, three-sixteenth of an inch thick, was then pushed into place.

The wooden box thus prepared was placed within a covered pasteboard box, the walls of which were about one-thirty-second of an inch thick. The pasteboard box, with its contents, was placed one or two inches from the brightly florescent part of an ordinary spherical Crooke's tube, and the action was maintained with this arrangement about two minutes, when the tube became so hot that the operation was stopped. . The sensitive plate was then taken out and developed with rodinol. Soon the part which had not been shielded by the glass slips began to show dark, and in a very short time the development was completed, the boundaries of the exposed part of the plate being well defined for the whole length of the plate. The image was then "fixed" in the ordinary way.

The ordinary 60-volt alternating current used for lighting the building was sent through the primary of an ordinary coil. The resistance of the primary of this coil is one-tenth of an ohm, and of the secondary 6000 ohms. The current through the primary was not stronger than 15 amperes. The current from the secondary of the first coil was sent through the primary of twenty-five turns of a Tesla induction coil, the secondary of which has 500 turns. The secondary will give a spark through about six inches of air. Its terminals were connected with the electrofloe of the Crooke's tube already mentioned.

Whatever the cause is that produced the effect, it certainly worked through a thickness of wood which at one place was not less than one-half an inch. At other places the thickness of the wooden shield was only about 1-8 of an inch, but it is very difficult to distinguish on the plate the part that was covered by the extra thickness. It is evident that an effect would have been produced through more than one inch of solid wood.

Electro-Therapeutics

DR. S. H. MONELL, Editor.

A PRACTICAL METHOD OF MEASURING AND REGISTERING THE TRUE THERAPEUTIC DOSE OF INDUCTION-COIL CURRENTS.*

By S. H. Monell, M. D., 865 Union St., Brooklyn, N. Y.

A former paper by the present author described a new induction-coil apparatus with a number of original improvements designed by me to increase precision and efficiency. In this second paper I now present to the medical profession my method of dose measurement and registration, which, so far as inquiry discloses, is the first practical method with a scientific basis.

I am met at the outset of my proposition to measure and record induced medical currents by the curt remark that it cannot be done. With this declaration before us, let us review a group of contemporary statements upon the subject of faradic dosage. The authority for each will be easily recognized by all familiar with the literature of electro-therapeutics.

1. "A bar to the progress of faradism is the impossibility of satisfactory therapeutic measurement. Edelmann's faradimeter is incomplete and, I must ever add, misleading as a physiological or therapeutic measure."

2. "The Edelmann faradimeter, which is not by any means, as was intended, a measure of faradic electricity, is too complicated and expensive for the practitioner, * * * and is merely a deceptive snare for physiological or therapeutic purposes. The strength of the current would be far better approximated by indicating the nature of the coil and the resistance offered than by the volt scale of this faradimeter."

3. "Unfortunately we have no means of measuring accurately the dose of faradism, the only means at our command being the millimeter scale placed at the side of the coils. This is a very rude method, indeed, but it is all we have at present."

4. "It is much to be regretted that we have no means of accurately measuring the therapeutic dosage of the faradic current."

5. "The old attempt to measure the faradic dose by a coil movable over a primary core, on a graduated scale, was so unscientific and inadequate as to be ridiculous."

6. "It is the ability to record the doses of the current to which must be ascribed the rapid progress of galvanism. To give the necessary impetus to faradism we must obtain this same precision, * * * and toward this end my efforts have been directed ever since I realized how seriously this valuable remedy was affected by its vagueness and uncertainty; and as early as 1886 I sought to approximate dosage by a defining and precising of details."

7. "The precise measurement of the faradic current for therapeutic purposes has not as yet been satisfactorily attained. The method

* Owing to the length of this paper only the first section of it is presented in this issue of the "Times and Register." It will be concluded in our next number.

heretofore in vogue, of measuring on a scale the distance the secondary coil is advanced over the primary, is inaccurate and delusive—in fact, means nothing—since the battery current varies with use; and no estimate is taken of the variable resistance encountered in the external circuit, which is altered by the location of the electrodes, by their size, and by the distance between them. The fact that this current possesses the same two qualities as the galvanic current—pressure and volume—makes it evident that we must in some manner estimate the relative voltage and amperage of the current employed in order to arrive at a practical conclusion of its comparative value."

The striking remark of Engelmann's, which closes the second comment cited above, although not observed by the writer previous to the preparation of this article, foreshadows what is substantially accomplished by the method to be described in this paper, and which was originated by me, January 29, 1894. My method also takes into account what is suggested as necessary in comment number seven, but before proceeding with descriptive details, certain relative facts require to be understood. These are as follows: No automatic meter or measuring instrument is required to select the proper dose of faradism for a patient, or to adjust it to the needs of therapeutic use. Direct currents need such an indicator, but induced currents do not. The educated skill of the operator regulates the dose, and does it adequately. The existing need is for a standard system of recording the dose administered, and thus impart uniform value to the reports of clinical cases, and introduce precision and definiteness into the special literature of the subject.

The accepted dose measurer of the constant current is the milliamperemeter, adopted universally within half a decade, and which in general estimation has lifted the galvanic current from empiricism and placed its therapeutics on a scientific basis. Let us, therefore, note exactly what the milliamperemeter accomplishes and what part it plays in the dose record, in order that we may better understand the problem before us in attempting to measure and record the dose of induction currents.

To enable separate observers to compare and repeat results in clinical cases treated by galvanism, we should take into account every factor which affects the action of the current. A comprehensive record must necessarily inform us then, on the following points: 1. Surface area or type of electrodes—which range from needles, sounds, tips, etc., to small or large pads, or water-baths, or may be clay, copper, zinc, carbon, platinum, steel, tin, brass; or covered with sponge, cotton, felt, etc., determining conducting power and density of the current. 2. Situation of both positive and negative electrodes during treatment. 3. Tissues treated and their pathological state, symptomatic conditions, etc. 4. Time and frequency of administration. 5. Reading of the milliamperemeter, or current volume.

Clinical reports of these particulars, with results of treatment, would be complete; and while of the various factors the meter furnishes but one, it supplies the last essential to the dosage of galvanism.

When we enter upon the problem of faradic dosage we find the factors no fewer, but differing in character. These are now: 1. Character of the current, as determined by the coil employed. 2. Description of electrodes and their situation during treatment. 3. Rate of current interruption. 4. Tissues treated, condition, etc. 5. Current strength. 6. Time and frequency of application.

The missing link in our clinical record is a means to state the current strength. We can sufficiently indicate the rest. How shall we measure the current strength? Now, certain features enter into the measurement of a constant current which are eliminated from the case of an interrupted or alternating current. The therapeutic requirements of the two are inherently dissimilar. The galvanic current is silent in its

flow and physiological activity. Without observing the deflection of the galvanometer needle, or making other test, we may be in doubt whether or not the battery is in action until the current is strong enough to be felt by the patient, and as a guide to treatment the patient's sensations are incompetent. The predominating quality of the direct current is volume—its voltage being relatively small in medical uses—and "volume" cannot be determined by the eye or ear of the operator. On the other hand, the induction apparatus, through its break-piece, which is the essential, the very life of this form of electricity, gives forth to the ear and sight unmistakable evidence of action; and its current is one of predominating force, of insignificant volume, chiefly mechanical in its physiological effects, and nearly devoid of chemical properties. It therefore requires no peculiar safeguard, like the milliamperemeter, against an excess of electrolytic or cautery action within the tissues. Moreover, owing to the feeble power of dissociation possessed by the constant current, an enormous range of uncertainty enters into every galvanic application without a meter in the circuit; for the actual current strength—i. e., dose—from the same number of cells and with the same electrodes will vary greatly with the degree of resistance of the skin, etc., so that similar conditions of E. M. F. are no guide whatever to similar doses and effects. With the galvanic current, with either 5, 10, 20 or 40 cells E. M. F., and with the electrodes in a glass of water, I can cause the meter to vary from 2 to 250 M. A., without altering the electrodes or the battery, simply by lessening the resistance of the water.

The nature of the induction current, however, is such that little of this great variability occurs in clinical applications when similar conditions of treatment are repeated. A given E. M. F. will produce a definite current strength from a given induction coil, and repeat it under the same conditons as often as desired. The influence of slightly varying skin resistances of different parts of the surface of the body is insignificant in the case of the higher voltage and penetrating capacity of currents from induction-coil apparatus. We have, in fact, but two practical conditions of resistance to consider in faradic therapeutics, viz., the greater general resistance of the skin in external treatment, and the lesser resistance of the moist, mucous surfaces of the cavities of the body. Thus presented, we observe that the problem of faradic dose-measurement, or means of record, is much simpler than was that of the now solved problem of galvanic dose-measurement; for if we can by any means indicate the electrical or mechanical energy of our induced currents under conditions identical with their clinical administration, we are assured of obtaining the same energy for therapeutic uses and repeating it upon patient after patient with substantial accuracy. A standard indicator of current strength will accordingly serve as a subsequent dose-register for future applications from all similar apparatus.

The methods so far suggested for measuring the dose of induction-coil currents are as follows:

1. A strip of suitable material, wood, celluloid or vulcanite, is placed at the side of the coil and marked in fractions of inches, or of the decimal scale. The current increases in strength as the coil overlaps the primary, and the dosage is taken to be the extent of overlap during the seance. The capabilities of measurement are exhausted when the overlap is complete, and the record must be alike for one or four cells, or No. 36 or No. 16 wire coils. It is not surprising that this attempt to measure current strength by a foot-rule was never scientifically successful.

2. The graphic method of marking the current waves; a purely fanciful idea adapted for black-board illustration of certain currents characterized by sufficient amperage to operate the tracing-pencil, but neither practical outside of the expert's hands, nor capable of demonstration at all with the currents of higher

tension and frequency and consequently smaller amperage now performing so much of the therapeutic work of improved induction apparatus.

3. The Edelmann faradimeter.

The name faradimeter is felicitious and suggestive of a proper method, but it has never reached a more practical stage of development for ordinary use than have ships for navigating the air. It is a complicated, expensive, though highly scientific, meter for the voltage of the current in short circuit; and since therapeutic applications involve the interposition of body tissues this instrument has no relation whatever to a physiological unit.

4. Micro-coulombs were asserted to be the electrical unit by which to express faradic measurement, but when we turn to the coulombmeter for aid we are practically where the faradimeter left us.

5. Voltmeters, ammeters and wattmeters that fill successfully their proper places in measurements of large commercial currents, do not supply us with any means to meter the small currents of medical coils. If a miniature wattmeter could be made to work it would be too expensive for general use.

6. Rate of interruption.

It is assumed that if this is stated in mathematical terms a certain amount of precision will be secured. Other factors, however, affect the question of dosage too materially to place dependence solely upon knowing the frequency of the periods.

This brings us to consideration of the method proposed and successfully employed by me for upward of a year. It is a method which, in my hands, has passed beyond the nascent stage of hopeful theory into the practical demonstration of constant and satisfactory use. The method was first made possible when I introduced my non-inductive fluid current controllers into the secondary circuit. They easily supersede in value all previous methods of regulating current strength.

The switch board of my induction apparatus presents a rapid interrupter (vibrations of 10,000 to 30,000 per minute); a slow vibrator capable of adjustment from about two thousand periods per minute down to less than one period per second; a cell selector throwing into circuit from one to six cells at will; an eight-button compound coil selector; a pole reverser and a metallic rheostat governing the primary current. This consists of a perpendicular column seven inches in height, wound with German-silver wire of definite resistance, making twenty turns to each inch of column. Attached to it is a registration scale to denote every wind of wire from zero to 140, and permit a record of position in every degree of use. This scale is also an advance in accuracy of record, first suggested by me. But the peculiar novelty introduced in this apparatus is the author's secondary circuit rheostat, which consists of the glass tubes seen at the left of the switchboard and marked respectively 1 and 2. They contain prepared fluids of great resistance (much greater than water), and are the first competent controllers successfully applied to the secondary current of a medical induction battery. The capacity of the first (one megohm) is sufficient to control the full coil, high-tension current, and reduce the perception of it to zero in the most delicate external applications to a patient.

The second tube possesses a much lower resistance, for currents of less penetrative force. Each tube is scaled in ohms of their actual resistance, measured and calibrated for me by Professor F. B. Crocker, of Columbia College, New York. The rationale of my method is now extremely simple. The fluids in one or both tubes, and at certain heights of the movable contact rod, varying with the primary E. M. F. and current density, entirely nullify the patient's perception of the activity of the induced currents, i. e., control them, and reduce their physiological and therapeutic manifestation to zero, and afterward regulate them to any strength we desire. What resistance to the energy of any given current does it require to do this? The

answer to this question is the solution of faradic dosage.

The scale referring to tube No. 1 shows the total resistance of its four and a half inches of fluid column to be one megohm. As the movable electrode descends in the tube the resistance lessens until it is only 900, 800, 600, 400. 200 thousand ohms, and so on down to the minimum, when the electrodes of the rheostat are nearest contact. The great resistance of this tube is designed to regulate the higher tension currents of the compound coil, which, in this apparatus, I have caused to be placed invisibly behind the switch-board and fixed in complete overlap upon the primary helix. This coil is immovable and does away with former sledge methods of sliding coils on and off, while it generates at all times the maximum of inductive influence.

Tube No. 2 is of much lower resistance, ranging from 55,000 ohms down to a residual resistance of 4000 ohms, and is suited to the regulation of currents of small voltage, from short, coarse coils or other applications where great tolerance exists, as within the pelvis. An additional turn of a switch also cuts out these secondary rheostats and furnishes all currents direct from the coils, in case this is desired. The metallic rheostat in the primary circuit then regulates the dosage by altering the E. M. F., but this rheostat takes no part in my special method of dose registration.

In my method, in applying a given current strength to a patient, it is simply considered that the energy at first wholly absorbed within the secondary rheostat, when perception of the current is nullified on its passage through the rheostat to the patient, is transferred from the controlling grasp of the rheostat to exert an equivalent energy whithin the tissues when the descent of the movable rod in the tube reduces resistance proportionate to its descent, and in exact proportion raises the current strength in the part of the circuit between the applied electrodes. In other words, as the restraint of the current falls in the rheostat its released energy rises in the patient, and by measuring the degree of restraint we find the equivalent of the released energy.

"Things which are equal to the same thing are equal to each other," and knowing the graduated resistance in electrical units of ohms interposed and removed from the secondary circuit at will, our knowledge of Ohms' law substantially defines for us the values of therapeutic dosage. We have only to let a portion of the measured rheostat substitute itself for the patient's tissues while we at first test the degree of energy to employ, and next to pass on the same current value to the patient, to arrive at a very practical measure of the dose administered. The resistance of the body is compensated in the process and causes no error, and the battery E. M. F. is unaltered during the dose regulation.

(To be concluded in next number.)

Book Reviews.

THE HISTORY OF ORATORY FROM THE AGE OF PERICLES TO THE PRESENT TIME. By Lorenzo Sears, L. H. D., Professor in Brown University. Published by S. C. Griggs Co, Chicago. Price, $1.50.

Regarding oratory as a fine art like painting, sculpture or architecture, the author has traced its history in the achievements of leading orators in Greek, Roman, Patristic, Medieval, Reformation, Revolution, Parliamentary and American periods, through twenty-four centuries in all. Brief biographical summaries are followed by estimates of eloquence and observations on the drift and character of public address in the several periods. Service rendered the science and philosophy of oratory by such rhetoricians as Aristotle and Quintilian is noted, and, at the other extreme, the extravagancies of medieval and crusading preachers. American representative orators from Samuel Adams to George William Curtis receive due attention, while the value of the press in supplementing and disseminating public speech is emphasized. A retrospective and prospective view of the subject closes the volume. The author found the field practically unoccupied, and has been the first to traverse its entire length with as much definiteness as a sketch of four hundred and forty pages will permit. An index of about two thousand topics makes the book valuable for reference and a study of the subject.

PRINCIPLES OF SURGERY. By N. Senn, M. D., Ph. D., LL. D., Chicago. Second edition. Thoroughly revised. Illustrated with 178 wood engavings and five (5) colored plates. Royal octavo, pages xvi, 656. Extra cloth, $4.50 net; sheep or half-Russia, $5.50 net. Philadelphia: The F. A. Davis Co., publishers, 1914 Cherry street.

The second edition of this excellent work comes to use with much new material. During the past five years the principles of surgery have undergone much improvement and are consequently incorporated in the text. The technique of several operations is described and illustrated for the purpose of demonstrating the value of a thorough knowledge of reparative processes.

The work deserves the cordial support of the profession.

LITERARY NOTE.

P. Blakiston, Son & Co., of Philadelphia, announce a book on "Appendicitis," by John B. Deaver, M. D., assistant professor of applied anatomy, University of Pennsylvania; assistant surgeon to the German Hospital, etc. The book will be arranged in a practical and systematic manner. The history, etiology, symptoms, diagnosis, operative treatment, prognosis and complications of this disease will be given in the order named. It will contain about forty illustrations of methods of procedure in operating, and typical pathological conditions of the appendix, the latter being printed in colors.

Correspondence.

TREATMENT OF CANCER.

Editor of the "Times and Register:"—Dr. Monell's articles are good medical reading, because they come from a man of truth who does not exaggerate; the case of cancer of the uterus which he improved by systemic treatment and which was killed by two things—fright at diagnosis of cancer and shock by operation—deserves some comment. I venture the assertion that if the woman had not been told anything more about her trouble, but had been toned up and carefully managed she would be well to-day; at any rate, living.

Cancer is a disease of nutrition; a rediversion to embryonic types of tissues because nature has been tremendously outraged by loss of nerve force in some excessive manner. In my own cases there have been such a history of loss of nerve force by family trouble, grief, poverty, riotous living, nursing of the sick for a long time, separation from a husband, unfaithful husband, crime in one's family, etc.

Dr. Epraim Cutter in Alb. Med. Annals, 1887, July and Aug. presented his "Diet in Cancer;" 1877 Oct., Amer. Journal of Obstetrics, "Food as a Medicine in Uterine Fibroids;" 1891, the Medical Bulletin, Aug. and Sept., "Diet in Tumor and Cancer." Dr. S. E. Herrick, of Cleveland, O., has written cancer as a disease of nutrition. Graily Hewitt and J. Marion Sims have also written on fibroid tumors as diseases of nutrition.

"Cemetery doctors" whose prognoses are always toward death make a good deal of trouble and disaster: surgeons who treat only by cutting do nothing but treat results and not causes. Can fibroid diseases or cancer of the liver be attacked surgically? Yet some cases have succumbed to systemic treatment.

Cancer, medically, is a tough disease to fight, takes all one's energies, yet I believe the cases that cannot be relieved can be made more comfortably medically than surgically. I have seen cases called cancer of the breast get well without any operation, and I have seen cases of cancer of the breast made much worse by operation; also as to cancer of other parts of the body.

For one to say that cancer is curable is to place himself liable to the term "quack," yet there are many cases to show that surgeons either do not know what cancer is, for cases called by them cancer have recovered under systemic treatment, or all cancer is not cancer. Why not, then, give the patient the benefit of the doubt and fight for his or her life?

Surgery has done much in the last two decades; medicine has done more for many of the so-called incurable chronic diseases are now known to be curable. This work is being done quietly, but the record of truth is here. If ideas are wanted as to systemic treatment in cancer they can be given and gladly.

In closing I must say that I am somewhat of a user of the microscope, but clinical facts are worth more than all the dicta and dogma of the laboratory.

Faithfully yours,
JOHN A. CUTTER, M. D.
New York, Feb. 1, 1896.

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Editor "Times and Register:"

Surgery is promoted and exploited as one of the most exact and scientific departments of medicine. Surgery and surgical descriptions are extensively exhibited in our modern periodicals and our more ambitious text books, but are not always clear as to methods or results. A surgical maxim ought to be indubitable in form and meaning. The exact and literal repetition of an imperfect surgical saying by one expert after another, indicates a slavish following of an original authority with insufficient comprehension of the words used.

Take the well-known dictum, which seems to have become current coin with the whole surgical world, that: "operations for recurrent appendicitis should be made between the attacks." Perhaps the originator of this bit of lucid surgical English is not known. The formula needs a commentary. What does it mean? Does it seek to enjoin that an attack of recurrent appendicitis should be followed after partial or complete recovery by excision of the appendix vermiformis? Or does the "operation between the attacks" mean, as the construction obviously implies, that another attack is bound to follow in spite of surgery and in spite of medical art?

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Apolysin is also the most freely soluble of the series. It dissolves in 55 parts of cold water and in less than one part of warm water. There are metallic salts of Apolysin, but it is the combinations with quinine, caffeine, etc., that deserve especial attention.

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I used creosote in phthisis from 1880 until about four years ago, when my attention was first called to guaiacol carbonate, which I have since used as a substitute for creosote. My experience with creosote was the same as the majority whose reports I have read. I tried it in almost every form that experienced practitioners, in Europe and this country, had recommended, but found many patients who could not tolerate it in any form or dose. Others could take small doses for a few weeks and then were obliged to give it up. Some could take from 5 to 8 grains per day, but found it impossible to go beyond such doses, even after intervals of rest, and trials of a variety of forms of administration. Occasionally I found patients who tolerated from 20 to 25 grains per day, with very beneficial effects.

Since the carbonate of guaiacol was brought to the notice of the profession I have prescribed a large amount of it—giving from 60 to 90 grains a day—and in no instance has it disturbed the stomach or produced disagreeable symptoms, and I believe it to be an inevitable remedy in phthisis pulmonalis.

Some of the cases I have treated with buaicol carbonate within the past three or four years, I believe, would not have recovered without it. Auscultation and percussion revealed disease of portions of both lungs, and the microscope showed numerous tubercle bacilli in every field. There was high temperature, dyspnea, harassing cough, profuse purulent expectoration, night sweats, emaciation, great weakness and little or no appetite. In several instances there had been one or more hemorrhages, followed by sanguineous expectoration, which continued for a week or ten days. In one case, which is described in detail, there had been three severe hemorrhages and sanguineous expectoration continued three weeks, purulent, and with bad odor. This patient recovered so that he can attend regularly to his business. When the temperature manifested any regularity in its paroxysms, as was sometimes the case, I gave 30 to 40 grains of guaiacol carbonate an hour before it made its appearance, with beneficial effects, the paroxysms being shorter. When the temperature was not above 100 degrees I usually gave the drug, in equally divided doses, morning, noon and night, commencing with 15 or 20 grains at a dose, and increasing to 30 grains. The most marked effect was in the improvement in appetite, and increase of strength, which was often apparent within a week or ten days, and the lessening of the expectoration and cough, and especially in the disappearance of the odor and purulent character of the expectoration. After a few weeks, in some instances, the fever was much diminished, the night sweats disappeared, and the patients improved steadily, like those before mentioned.

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In most of the cases the success was as rapid as certain.

The number of motions diminished considerably, the evacuated matter became harder, and the general condition of the children improved visibly. Absolutely no unpleasant symptoms were caused by the drug.

—Therapeutische Wochensch., No. 49, 1895.

INFECTIOUS ORIGIN OF ACUTE DELIRIUM.

BY DRS. BIANCHI AND PICCININO.

Among the psychopathic forms which simulate acute delirium, and which have until now been described as such, is one to which may be given the name of acute bacillary delirium. It is clinically distinguishable from all the other forms through its greater intensity of symptoms, by the adynamic phase that promptly succeeds the phase of exaltation by its short duration and its fatal issue; bacteriologically by the presence in the blood and nervous centres of a peculiar bacillus that the authors have found in all the cases which have come under their care.

Fever does not necessarily indicate the bacillary nature of an acute delirium.

Acute bacillary delirium must be considered as a very serious infectious disease, in which the symptoms of excitement are followed by depression of a most serious and typical kind.

A bacteriological examination of the blood will alone identify beyond a doubt the character of the malady.

In the other forms of acute delirium and of mania, a bacteriological examination gives equally positive results.

If, however, the proof of the presence of micro-organisms shows a biological connection between the clinical form and their presence in the blood, in the sense that they disappear or diminish greatly in numbers with the amelioration of the patient, that does not yet authorize us to infer an immediate connection from cause and effect.

The presence of micro-organisms in these cases only proves with certainty that there is a great disturbance of nutrition forming a highly favorable soil for the development of bacteria, bringing about, consequently, a deterioration of the whole organism, with rapid wasting, fever and other toxic effects upon the functions of the nervous system, the maximum of which is delirium.

The bacteriological results obtained by investigating all other forms of sensory delirium, which resemble the true variety, justify the criticisms of certain authors, who have been unable to find the bacillus described by Bianchi; for these forms of acute sensory delirium are much more common than true acute delirium, which is very rare.

—Annali di Neurologia.

MANZ'S GLANDS IN THE NORMAL HUMAN CONJUNCTIVA.

In 1859 Prof. Manz discovered in the conjunctiva of the pig, glands, which Henle afterwards found in the human conjunctiva. From then until now neither Manz nor anyone else could find them again, so most anatomists denied their existence. Dr. T. Theodorow, of Moscow, has rediscovered them, and his description coincides with that of Manz and Stromeyer. T. stained the fresh conjunctiva with hemotoxylin, and spread them out as flat as he could before examining for them. He was thus able to find the glands in conjunctiva from people of all ages.

The glands are round or oval shaped bodies, distinctly shown by the stain. The periphery is more distinct than the centre, and shows lines which radiate towards it. A brilliant white, sharply defined, oval opening is found exactly in the centre of the round bodies, while in the oval ones it is nearer the periphery.

These glands are mainly found in the tarsal portion of the conjunctiva, but are very rare near the cornea; they are often in pairs, and each lid contains from twenty to thirty.

In transverse section they resemble a pocket-shaped hollow underneath the epithelium of the conjunctiva, with an excretory duct opening on the surface through a constricted neck.

A hyaloid membrane, with lining of cylindrical epithelial cells, lines both the sack and its neck. The glands are mostly perpendicular to the conjunctival surface, and are filled with free cells and detritus. The use of these glands is unknown, but Theodorow thinks that they must play some important role in the pathology of the conjunctiva.

—Centralblatt f. prakt. Augenheilkunde, 1895, p. 257.

THREE CASES OF GANGRENE OF THE EXTREMITIES IN YOUNG PEOPLE.

In the Jewish Hospital of Warsaw, Dr. Gotard had at one time three cases of gangrene of the extremities. The patients were aged respectively 27, 40 and 46 years. The disease commenced in all of them with severe pains in the fingers and toes, therefore, in the parts farthest removed from the centre of the circulation. After a while abscesses formed at the painful points and became the starting point of the gangrenous process.

Conservative treatment was useless, and the gangrenous portion was amputated. Scarcely had the wounds commenced to heal when gangrene reappeared either on the stump or on another finger.

The first patient was tuberculous; gangrene began on his left leg in 1890. The second case, a fish dealer, 40 years of age, contracted syphilis in his 26th year; in the third case no direct lues could be found. As objective cause only the slowing of the pulse in certain arteries could be shown. In the second case the pathological anatomical examination of the amputated portion showed endarteritis obliterans.

—Gazeta Lekarska, No. 39, 1895.

FORMALIN CATGUT.

Dr. Vollmer says that a two per cent. aqueous solution of formalin will, in 24 hours, kill every germ in catgut, even without previous removal of the fat.

Things sterilized in this way should then be kept in a 0.5 solution of the same substance. However, since the keeping qualities of the solution deteriorate after a fortnight's time, Dr. V. prefers a sterilized Tavel's solution (Na. Cl. 7.5; Na2 CO3, 2.5, aqua destillata ad 1000.00).

In this way the objection common to most antiseptics and to formalin, as well, that they benumb the hands, is avoided.

—Centralbl. f. Gynaek. No 46, 1895.

Russian and German

Translated by DR. A. D. DAVIDOW.

WARM AND COLD BATHS DURING MENSTRUATION.

M. Merinow—Eschenedelnik, 1895, No. 22.

In various gynecological affections, general baths (27-28 degrees R.) are not only harmless but have the power of quieting pain, do not influence the menstruation nor make it scanty.

Women with healthy genital apparatus and normal menstruation, taking baths of 32-33 degrees R. (patient sitting in the water up to the waist) at the menstrual period surrender. Thereupon author observed no effects; the quantity was rather less and the period shorter. The author cites numerous clinical cases with results confirming his views.

CORIITIS RHEUMATICA.

A. Pjassitsky—Ibid No. 4.

Author observed that on the skin of persons exposed to catching cold and living in damp quarters, appear peculiar bluish-red stripes from 1-2 ctm. long which represent the dilated

venous capillaries. This symptom is abundant in skin rheumatism. The temperature is not raised, the skin is very sensitive, the muscles lying beneath the affected portion are not tender on pressure. Frequently, however, the muscles and joints may simultaneously be affected. The clinical picture of skin rheumatism, when localized on the chest, deserves special notice; the patient impresses one as being severely affected with asthma. Treatment consists internally natr. salicylate and rubbing in with chloroform.

THE DISINFECTIVE ACTION OF IODOFORM.

R. Schimminsky, Wratch, '95, No. 28.

In a culture of staphylococcus pyogenus aureus, author placed iodoform, of which the vital activity of the same was not impaired. Amongst other experiments were those on rabbits, on whom fresh wounds were made and a three day colony of streptococcus and staphylococcus applied. One was dressed with iodoform and the other without. On the 10th day in all suppuration appeared.

The iodoform bought in the market contains generally germs and to free it, it is necessary to treat with sublim. or carbol.

ON THE CAUSES OF THE LESSENING THE LEUCOCYTES IN BLOOD AFTER INJECTION OF DIFFERENT SUBSTANCES.

N. Tschistowitsch—Bolnitschnaja Gaseta Botkiva, No. 22-36.

Author in many of his works made himself known as a follower of the Soldscheider-Jacobs theory, which is, that after injections of bacteria cultures, tuberculin, hemialbumose, etc., a general hypoleucocytosis ensues by the aggregation of the leucocytes in the capillaries, especially in that of the lungs.

In the summer of 1894, anthor again made attempts to explain the hypoleucocytosis, in the laboratory of Kronstadter Marine Hospital. In a number of experiments on animals author found the number of leucocytes in the perpheril (ear) and centrally (mesentery) vessels after injections of pepton and tuberculin solution in the blood and found, as before, marked hypoleucocytosis. In another number of experiments, the animals were killed as soon as hypoleucocytosis set in, and while the heart yet pulsated, made microscopical specimens from the internal organs. The capillaries of the lungs, rarer that of the liver and spleen, showed themselves filled up with leucocytes, namely, of the polynuclear cells, which quantity diminished in the larger vessels. Especially clear is this after injection with typhus culture and cultures of Frankels diplococci. As the cause of such division of the leucocytes, author gives first the contraction of the vessels in the lesser circulation after an injection, through which the lung capillaries act as the first filter, in which the pressed in leucocytes are arrested. This is favored by the increased and diminished circulation of the leucocytes, due to the sucking up of the injected substance. Aside from this, the heart action is weakened, causing anomalies in the circulation; finally the blood-making organs are weakened, which influences in lessening the leucocytes in the blood circulation.

ON THE ACTION OF BROMOLITHION ON ALBUMINURIA AND THE KIDNEY SECRETIONS IN ACUTE AND CHRONIC PARENCHYMATOUS NEPHRITIS.

K. Pawlowsky—Ibid, No. 29.

In 22 cases of nephritis, author used bromolithion, and found the quantity increase daily, specially so in the acute forms, frequently reducing the quantity of albumen. Once hematuria, twice nausea and once vomiting was observed. In nephritis associated with pregnancy, it was as well found to be of great benefit.

French

Translated by DR. E. W. BING.

REPRODUCTION AND THE LAW OF THE SEXES.

The end of living is for the preservation of the species. This end is attained in nature, both by reproduction and by the perennial nature of the individual. In fact, there are beings who may be considered immortal—as some plants and inferior animals, such as infusoria or rather protozoa, which multiply by division or fissiparity indefinitely under favorably circumstances. Each of these individuals is formed from the original substance—multiplication by budding. Gemmiparity is only one form of division. It is a part of the individual emitted and detached, which later on in its turn goes through the same process as is seen in plants of the higher orders. But among the superior beings the preservation and continuance of the species do not occur by the multiplication of the individual, but by the division and multiplication of the protozoa—cells—which compose it. This individual being is not immortal; one day the elements of which it is composed return to the mass of eternal matter to there undergo fresh transformations. In recompense for this, the property of creating new beings like itself has been conferred on it, and the species is continued by the function of reproduction.

The preservation of the species is more important than that of the individual. In plants many kinds die as soon as they have borne fruit, whilst others only cease their activity until again placed in favorable circumstances, when they again take on life. The same thing is seen among insects, in which certain kinds are only created for the express purpose of continuing their kind, and which die immediately after they have fulfilled their purpose.

It is no longer a question of a simple multiplication. It is a generation, an operation which depends on two individuals or rather two elements, the positive and negative; or, in other words, male and female. In the act of sexual reproduction each individual tends to engender one of the opposite sex, according to which is the most active at the time functionally.

The law of procreation by each sex, of the opposite sex, explains why generally girls resemble rather the father, who generally also likes them better than boys, and the reverse. It must be noted in passing that incest, although deemed by society a crime, is nevertheless allowed by nature, as is seen in all animals, and which to the first inhabitants of the globe was obligatory, for if it had not been so, where would be the population of the world? The law of procreation by each sex of the opposite sex explains why under ordinary conditions of marriage the eldest child is generally a girl, whilst the youngest is often a boy, and generally the best loved of the family by his mother.

—Dr. Pelletan, Jour. d'Hygiene.

EPITHELIOMA OF ESOPHAGUS.

M. Stroup reported case of a man who had cancer of the esophagus, though nothing during life in the way of pain or dysphagia. He died suddenly of gastrorrhagia. The tumor was primary. extending downward along the pre-vertebral ganglia to the lesser curvature of the stomach, where it had contracted adhesions. These, later, breaking down by ulcération, opened widely the gastric vessels, from which fatal hemorrhage followed.

Current Surgical Literature.

T. H. MANLEY, M. D., New York, Editor.

TREATMENT OF CONGENITAL DISLOCATION OF HIP JOINT.

M. Calot declares that if we are not able to reduce these luxations before the third year we should have recourse to surgery. Reduction by manipulation, however, he maintains is exceedingly rare. Operation should be withheld only in those cases of absence of the head or neck of the bone; or when the femoral head is advanced far anterior to the diaphesis. In order to obtain the best results, by surgery, we must either resect the head, or gouge out a cavity for it, in the obliterated acetabulum. The anterior incision gives much greater facility for manipulation here than that of Hoffa or Langenbeck. About six months' recumbency in bed is required before such cases are allowed to walk about.

—Neuvieme Cong., Trans de Chirurg., Revue de Chirurg.

INJECTION OF IODOFORM IN THE TREATMENT OF SURGICAL TUBERCULOSIS.

(By Wieland.)

In the adult, under a great diversity of circumstances, we may spare our patient the dangers of a surgical operation by the intelligent employment of iodoform injections.

With children, the results are even better, in those cases involving larger joints, and widely disseminated; as in white swelling and other tubercular arthroses chiefly confined to the synovial membrane.

The late researches of Bruns and Nauwerck leave no doubt on the specific action of iodofrom on the bacillus of Koch, and its progenic residue, which now undergoes fibrois and cure. In 70 cases Weiland cured 54 by this plan—77 per cent.

THE TREATMENT OF TORTICOLLIS.

Dr. Weiss recommends the use of curare in this disorder. He employs a filtered solution of curare, of the strength of two grains to three drachms of sterilized water. This is given in doses of from fifteen to thirty minims.—N. Y. Med. Record.

CONTRIBUTION TO THE TREATMENT OF ACTINOMYCOSIS.

(By Towney.)

A man of 51 years came under his care with a tumor in mastoid region, which proved to be actinomycosis. Being very large, it was simply incised and the incision well saturated with tincture of iodine. Later it underwent atrophy, when a prompt cure followed. The author believes this this infection may commence in the cecum and simulate appendicitis. The prognosis of actinomycosis has become more hopeful, as recovery is the rule. Iodide of potash is practically a specific, when taken internally, in destroying the fungi or actinomyces.

—Annales de Med., Dec. 29, '95.

THE VOMITING OF BILE STONES.

(By Dr. Gaillard.)

This author briefly reports on the pathological conditions which lead to the expulsion of biliary calculi through the stomach.

These calculi, after reaching the stomach, are not acted on by the gastric juice and hence are discharged unchanged. It may be said that these concretions cannot return through the pyloric opening, which offers an effective barrier against stones which are sent through the common duct into the small intestine, working their way into the stomach.

Biliary calculi make their way

into the stomach by three different routes.

First—By gastric-cholocystic fistulae (Creiveilhier, Nauyre, Bardenhawer); second, by hepato-gastric fistulae (Bassaud, Clin. Murchison); third,by cholocysto-duodenal fistulae, the most frequent of all; and lastly, cholecho-duodenal. Those which pass in through the natural duodenal passage or a fistula are rarely vomited. From a practical standpoint, if our patient have no icterus, and with the calculus, blood and pus are vomited with gall, we may know that there is a chologastric fistula.

If our patient rejects several small calculi and has had jaundice we know he has a choloduodenal fistula.

Lastly, if one have not had jaundice, and raises many bile-stones, who previously had melena and hematemesis, we will diagnosticate cholecysto-duodenal fistula. Each type calls for a special therapy, according to indications present.

The author reports a case in his own practice of cholecysto-intestinal fistula. The patient complained of constant pains over the epigastrium; no jaundice. For many days the pain was agonizing, but there was no jaundice. Finally a large calculus was vomited, when all pain ceased. The author concludes that when a calculus is too large to engage in the cystic duct, adhesive pericystitis may be provoked, leading by an ultimate pressure-necrosis, to perforation and escape into nearest hollow viscus. We will have then biliarylithiasis with cholecysto-intestinal fistula.

In these cases the questions raised are: First, What point of the intestine is the seat of fistula? Second, Why should there be so much suffering? Third, How long must pain continue? In case considered it was difficult to determine the seat of perforation, because there was tympanites of abdomen from the moment of the dolorous crisis; but this might be explained by "peritonism" and a reflex paresis, seated possibly as low down as the colon; but the late researches of Courviseur and Naunyu (1892) make it more probable in the duodenum. In one case of a woman, the cystic duct was closed more than a year. She had a perfect cholocysto-duodenal fistula. There were no symptoms of colobacillary infection of the hepatic passages.

In cases of the latter type, in which the stone, from its great size, becomes engaged, but cannot pass through, coincident with which there are grave constitutional symptoms, surgical intervention offers the promptest means of relief. Cholocystotomy, with extraction of the stone, or, better yet, cholocystectomy and suture of the fistula in the bowel.

—Annales de Medicine, 12 Dec., '95.

RUPTURE OF THE BILIARY PASSAGES, CONSECUTIVE TO A CONTUSION OF THE ABDOMEN.

(By Dr. J. Roux.)

Grave contusions of the hepatic structure are rare. The author reports a case of a man 33 years old, who, after a fall over the left hypochondricum, had bilious vomiting with fecal admixture. Two days after the accident, the abdomen, being enormously distended, was tapped, when seven litres of fluid, rich in bile pigment, were drained off—about one and a half gallons. In two months the patient had entirely recovered. The absence of pronounced peritoneal reaction is easily explained by the fact that the bile passages are entirely aseptic, except at the opening into the intestine. (Duclaux, Depre, Tizzoni and Loresta.) (We might include our own Feuger, of Chicago.—T. H. M.)

As to therapy, the author concludes, with Rouher, that because of the difficulties in making a precise diagnosis of the seat of rupture, intervention should not be immediate, and the case should be treated on tentative lines. We should reserve laparotomy for those cases in which peritoneal reaction is intense. If there be no peritonitis, the effusion is entirely harmless and a simple evacuation with the trocar is ample to relieve temporary distension.

—Gaz. des Hop., Dec., '95.

Current Literature in Obstetrics and Gynecology.

E. D. KINNEY, M. D., Boston, Editor.

VENESECTION IN OBSTETRICS.

In a paper read before the Medical Society of the Missouri Valley at St. Joseph, Mo., Dr. William B. Dewees related his experience in a number of cases during a period of sixteen years, and concluded by saying that venesection at the time of parturition in certain plethoric morbid conditions is a safe, easy, prompt and effectual means of:

1. Relieving the sufferings of parturition.

2. Relieving the rigidity of the os uteri, perineum and adjacent soft parts.

3. Facilitating the delivery of both the child and the placenta.

4. Preventing irregular or spasmodic contractions of the uterus.

5. Preventing such accidents as have occurred from rigidity of the os uteri, the perineum and adjacent soft parts, and the irregular spasmodic contraction of the uterus; namely: Rupture of the uterus, laceration of the cervix, perineum and sphincter ani; protrusion of the cervix before the head of the child, which in some cases had to be divided before delivery, was effected, inflammation and gangrene of the soft parts from too long pressure of the child's head, by the prolonged, frequent and repeated violent contractions of the uterus; atony of the uterus, which has succeeded even after the soft parts and os uteri yielded and the child was delivered by instrumental aid, and hemorrhage supervened, which frequently proved fatal.

In short, to say nothing of the injuries inflicted upon the child, when we add to these the risk of convulsions and rupture of the blood-vessels, all of which have happened and may happen again, under similar circumstances, we cannot conclude without again raising a voice in favor of venesection as a most valuable aid in relieving and preventing the sufferings and conditions herein enumerated.

—The Medical World.

SHOULD INTRAUTERINE INJECTIONS OF GLYCERIN BE USED FOR THE INDUCTION OF LABOR.

At a meeting of the American Association of Obstetricians and Gynecologists Dr. Hypes, of St. Louis, Mo., in his paper on this subject reported several cases where the result of using glycerin for the induction of labor had proved unreliable as well as unsafe.

"Pelzer's method" has now been before the profession long enough, and sufficient cases (between thirty and forty), with results, have been reported for an intelligent judgment to be passed as to its value.

He cites five cases, all presenting evil effects from the intrauterine injections of glycerin for the induction of labor. While different organs were affected—kidney, liver, stomach, bowels, brain, nervous system—the kidneys suffered invariably. These symptoms can all be accounted for by the poisonous effects of glycerine upon the blood, decomposing as it does the red blood corpuscles.

Pfannenstiel, as quoted by Embden, says glycerin is liable to occasion decomposition of the blood, as Lichsinger, Schwan, Filehne, Lebedeff and Wiener have demonstrated, and Afanassiew has shown by experimenting with dogs and rabbits that the hemo-globinuria caused by glycerin brings on a glomerulo-nephritis, which is followed after the injection of more glycerin by interstitial nephritis as well as by interstitial hepa-

titis, each case presenting the bloody urine with its constant constituents.

Pfannenstiel finds an explanation of the absence of accidents in Pelzer's cases in the fact that Schwan, Lebedeff and Filehne have shown that in rabbits when the glycerin is brought under the skin hemoglobinuria always occurs, but that it did not occur, or in a slight degree only, when it was injected directly into the veins. Without giving an explanation of this remarkable fact, Pfannenstiel deems it possible that in Pelzer's cases the glycerin was rapidly absorbed by the circulatory system, while in his case it acted in the decidua uteri as if it had been injected by the hypodermic method.

Whatever may be the explanation of the various effects of glycerin injections in the hands of different operators, the identity of the poisonous symptoms in the five unfavorable cases presented in his paper is incontrovertible.

Mikulicz, quoted by Pfannenstiel, says glycerin can induce poisoning when injected into absorbing tissues or cavities, and he has observed hemoglobinuria, accompanied by methemoglobinuria, appear in several cases in twelve to twenty-four hours after using such injections, disappearing in twenty-four to forty-eight hours without reappearing. In one case after curetting, two periarticular abscesses of the hip in a 4-year-old boy, sixty grammes of iodoform-glycerin, were injected, followed by severe hemoglobinuria, and death in four days.

The autopsy revealed acute parenchymous nephritis, edema of the lungs and fatty degeneration of the liver. This is almost the identical condition found in the autopsies after death where intra-uterine injections of glycerin had been used. That glycerin used in this manner is poisonous and deleterious admits of no doubt, and no degree of efficiency can justify the employment of means fraught with such danger, for it does not possess even the merit of certainty, as many operators, after using it, have resorted to other measures to effect delivery.

Glycerin injections sometimes produce very violent uterine contractions and hence must be followed by a great fetal mortality. In fact, Pelzer himself says that large doses such as one hundred cubic centimetres are apt to destroy the life of the child in this manner, and that he believed such a result happened in one of his cases.

In examining the thirty-three cases reported he finds that thirteen children were born dead, or survived but a few minutes, which is a very large mortality for an ideal operation.

To sum up the argument: Intrauterine injections are often inefficient, especially so in doses under fifty cubic centimetres. They are liable to be followed by all the ill effects—shock, air embolism, thombosis, metritis, and sepsis—of other intrauterine douches which have been used and abandoned during the present century. They may, and sometimes do, produce glycerin poisoning, i. e. decomposition of the blood corpuscles, resulting in diseases of various organs, but more especially in nephritis and hemoglobinuria.

The method takes no consideration of the life of the child and hence results in great fetal mortality.

Its use should be abandoned or the dosage reduced especially in subjects with prior existing kidney affections.

—American Journal of Obstetrics.

SUCTION OF THE NIPPLES IN THE TREATMENT OF FIBROUS TUMORS OF THE UTERUS.

In the Centralblatt fur Gynakologie for December 7 there is an abstract of an article by Dr. F. Howitz, of Copenhagen, published in the Ugeskrift for Lager, in which it is related that the author happened to have at the same time under his care two women, both of whom were pregnant, and both of whom had large fibro-myomata of the uterus. One of these women nursed her child, and an examination at the end of five months after its birth showed that her tumor had entirely disappeared.

The other woman did not nurse her child, and her tumor remained unchanged. These cases led the author to seek if by means of suction on the nipples a favorable influence could be exerted upon fibrous tumors of the uterus. He has tried it in only five cases, the suction being carried out daily. In some of the cases there seemed to be a diminution of the size of the tumor, and in no case has any harm been noticed as the result of the procedure.

—New York Med. Jour.

Therapeutical Progress.

CAFFEINE.—The following salts are mostly very soluble. They have been recommended for hypodermic injection, and all contain about 50 per cent. of the alkaloid. Sodio-benzoate, 45.8 per cent.; Sodio cinnamate, 62.5 per cent.; Sodio citrate, Sodio-salicylate, 62.5 per cent.; Borocitrate, Phenate, phenylate or carbolate. Phthalates solution in water.

C. CHLORAL.—See chloral caffeine.

C. IODOL.—A combination in molecular proportions which does not liberate iodine as rapidly as iodol. Substitute for iodol.

CAMPHAR.—Supersaturated solution of camphor in diluted alcohol. Externally in dermatology.

CAMPHOID.—Combination of pyroxylon, camphor and absolute alcohol, used like collodion.

CANCROIN.—Alexin from cancerous tissue, according to Adamkiewickz. Clear, albuminous fluid, specific for cancer. Hypodermic inj. four min. once a day, increasing by four min. each day until 16 min. is given; continue this dose as required. Inject into sound tissue adjacent to cancer.

CANNABINE TANNATE.—Yellow or brownish powder, bitter astringent, slightly soluble in W. A. E., readily if acidulated, hypnotic, sedative, (hysteria, etc.). Dose four to eight grs, three times a day. Max. daily, dose, 30 grs.

CANNABINON.—From the tops of cannabis sativa. Balsamic, resinous body, insoluble in W., soluble in A., E., C., benzine, oils. Hypnotic dose, 1-2 to 1 1-2 grs., disguised in powdered coffee. 15 gr. vials. ea. 20. 10 per cent. trituration.

CANTHARIDIN.—From cantharis vesicatoria. Colorless, odorless, tabular crystals, soluble in A., E., dil. alkalis, insoluble in water. Recommended by Liebreich for treatment of tuberculosis. Hypodermic inj. of one cc. of 1 to 5,000 alkaline solution.

CARDINE.—Liquid extract from heart muscles of animals. Supposed to affect the heart as a tonic.

CARVACROL IODIDE.—Salt of phenol from oil of origanum. Yellowish brown powder, insoluble in W., soluble in E., C., oil; substitute for and used in same manner as aristol (and iodoform). Not in the market.

CEREBRINE.—Liquid glycerin extract from brains of animals. Supposed to exert a specific action on the brain.

CHAMPACOL.—Camphor of champaca wood.

CHINOL. (Chinoline or Quinoline Monohypochloride.)—White crystalline, odorless powder, almost insoluble in water. Soluble in A. Antipyretic. Dose, three to five grs.

CHINOLINE. (Quinoline, leucoline.) Synthetic alkaloid. Colorless hygroscopic liquid, with pungent characteristic aromatic odor. Very slightly soluble in cold water. Soluble in A., E., C., hot water. Turns brown on exposure. Antiseptic (locally in pharyngology, carious teeth, cotton saturated and pressed into hollow, renew every two hours). Antizymotic (0.2 per cent. preserves urine, 0.4 per cent. blood). Antipyretic. Dose, 15 to 30 min. daily.

CHINO-TOXIN. (Dichinolin - Dimethyl-sulphate, quinotoxin.) Synthetic, analogous in action to curare.

CHLORALMID. (Chloral-formamid.)—German Pharmacopeia. Lustrous, colorless, slightly bitter, crystals. Soluble in A., three glycerine, slowly in 20 water. Decomposed at 140 degrees F., or by alkalis. Valuable hypnotic, producing calm refreshing sleep within half an hour without bad after-effects. (Alcoholic insomnia, mental disorders, hysteria, neuralgia, pulmonisis.) Dose, 15 to 40 grs., dissolved in elixir, not to be confounded with chloralamid.

CHLORAL-AMMONIUM.—White crystalline unstable powder. Soluble in water. Hypnotic. Dose, 15 to 30 grs.

C. CYANHYDRIN.—See chloral hydrocyanate.

C. CAFFEINE. (Caffeine chloral.)—Molecular combination of chloral and caffeine. White scales. Soluble in six water, 30 A., insoluble in E. Decomposed by acids and alkalis. Analgesic, antirheumatic, laxative. Hyp. inj., two to seven grs.

C. CARBOL. (Chloral-phenol.)—Oily liquid mixture of equal parts of chloral and carbolic acid. Counter-irritant, epispastic and local anesthetic. For tootache.

C. CAMPHOR. (Camphorated choral, N. F.)—Combination of equal parts of chloral and camphor, oily liquid. Soluble in A., E., C. oils, glycerin; decomposed by water.

C. HYDROCYANATE. (Chloral hydrocyanin, chloral cyanhydrin.)—White rhombic plates with color of hydrocyanic acid and chloral. Soluble in water, A., E. Fairly stable in solution. Decomposed by alkalis. 1.29 parts dissolved in nine parts distilled water equivalent to U. S. P. 2 per cent. hydrocyanic acid. 1 to 160 bitter almond water of Germ. Pharm. 646 parts hydrocyanate contain one part pure HCN.

C. MENTHOL.—Mixture of equal parts of chloral and menthol. Local disinfectant anesthetic.

CHLORALOSE. (Anhydro-gluco-chloral.)—Fine, bitter, colorless needles, soluble in A. E., warm water, slightly in cold water. Anesthetic, hypnotic. Dose, 3 to 12 grs.

CHLOROL.—Solution of chlorides of mercury and sodium, hydrochloric acid and cupric sulphate in water. Antiseptic. The cupric salt acts as an emetic if the mixture is swallowed.

CHLOROLIN.—Mixture containing mono and tri-chlorphenols. Disinfectant for urinals, etc. Also in two to three per cent. solutions in surgery and as mouthwash in 1-2 to one per cent.

CHLOROPHENOL. (Ortho-monochlorphenol.)—Formed by the action of chlorine on phenol. Antiseptic, volatile, liquid, inhalant in diseases of the respiratory organs chlorphenol 14, alcohol 4, eugenol 1, menthol 1. Inhale 16 to 30 drops daily. The vapors (heavier than air) penetrate to all parts of the lungs. Also applied to wounds, ulcers, etc.

CHLORYL.—A mixture of ethyl and methyl chlorides used for local anesthesia in minor surgery, dentistry, etc.

Chroatol.—Greenish yellow aromatic

CHROATOL.—Greenish yellow aromatic crystals insoluble in W., slightly in E., C., quite soluble in A., benzol and ecetic ether. Dermal application in psoriasis, alopecia, etc., in powder or ointment.

(To be Continued.)

Prescriptions.

BLEPHARITIS.

Millendorf recommends:

R.—Red oxide of mercury.....grs. x
Vaseline.....oz. ss.
M. Sig.: Apply to the edge of lid at bedtime.
Or,
R.—Ammoniated mercury.....grs. xx
Powdered camphor.....grs. x
Vaseline.....fl. oz. ss.
M. Sig.: Apply at night.
R.—Solution subacetate of lead..gtts. x
Ointment of rose water.....dr. iij.
M. Sig.: To be used for chronic forms of marginal blepharitis.—Coll. and Clin. Rec.

CHORDEE.

R.—Ext. opii.....gr. j
Camphoræ.....gr. x
Ol. theobrom.....q. s.
M. et ft. suppository No. 1.
Sig.: Use at bedtime.—Ricord.

INCONTINENCE OF URINE.

R.—Sodii benzoatis.....gr. xx
Sodii salicylatis.....gr. xx
Fld. ext. belladonnæ.....gtt. ij
Aquæ cinnamomi.....oz. iv
M. Sig.: A teaspoonful four or five times daily.—White.

RHEUMATISM.

R.—Veratrini.
Hydrarg. iodidi virid.....aa dr. j
Petrolati.....oz. j
M. Sig.: Apply over joints affected.—Hare.

RHINITIS.

Cod liver oil, the hypophosphites, etc., will do more for the cure of rhinitis in scrofulous children than any simple local application.

FOR PULMONARY TUBERCULOSIS.

Take:

Calcium phosphate.....4 grs.
Menthol.....4 grs.
Sodium bicarbonate.....3 grs.
Powder of nux vomica.....¾ gr.
Iron lactate.....¾ gr.

To be taken four times a day with food.—Med. Chron.

ICHTHYOL.

This agent is recommended as a gargle in acute pharyngitis. In the treatment of acute coryza, good and speedy results may be obtained by spraying the nose with a mixture of one part of ichthyol and one hundred parts each of ether and alcohol. One application is said to be all that is necessary.

GONORRHEA.

A favorite prescription of Dr. J. William White's, for the second stage, is:

R.—Hydrarg. chlor. corros.....gr. 1-6
Acidi carbolici.....dr. iss
Zinci sulpho-carbolate.....gr. xxiv
Boro-glyceride (50 p. c. sol).f. oz. ij
Aquæ rosæ.....q. s. ad. f. oz. viij.
M. Sig.: Use as an injection after urinating.—Med. World.

ASTHMA.

R.—Ammon. brom.....dr. viij
Ammon. chlor.....dr. jss
Tinct. lobeliæ.....dr. j
Spir. æth. comp.....oz. j
Syr. acaciæ.....ad. oz. iv
M. Sig.: Dessertspoonful in water every hour or two during paroxysms.—Pepper.

ASTHMA.

The following will be found most useful in this distressing complaint:

R.—Chloralis.....½ dr.
Potassi iodid.....½ dr.
Syr. aurant.....6 dr.
Aquæ.....42 dr.
M. Sig.: Two or three tablespoonfuls a day.—Coll. and Clin. Record.

PLEURISY.

In effusion:

R.—Potass. acetatis.
Potass. bitartrat.
Potass. citratis.....aa dr. j
Dec. tritici repentis radicis oz. ss; oz. viii.
Sig.: A tablespoonful from four to six times a day.—H. J. Garrigues, M. D., London Med. Times.

BILIOUSNESS.

R.—Fellis bovini purif.....oz. j.
Magnesii sulph. exsiccat.....scr. ij
Resinæ podophylli.....gr. v.
M. et ft. pil. no. xx. Sig.: One pill three times a day.—Da Costa, in Dominion Medical Monthly.

CRACKED NIPPLES.

Exposure of the glands and nipples to the air tends to diminish their tendency to become sore and fissured. Daily ablutions with cold water are always essential. The following application may be used as a prophylactic when an astringent is desired:

R.—Tannin.....dr. i
Glycerinæ.....oz. ss.
Aquæ rosæ.....oz. ss.
Sig.: Apply daily as directed.—C. D. Palmer (Norris' Textbook of Obstetrics).

For Physicians' Wives

EVAPORATED MILK

Evaporated milk for those on a milk diet who cannot take the required quantity. Heat the milk rapidly over a flame easily regulated. Diminish the heat before the boiling point is reached, stirring all the time, even after the flame is extinguished. Thirty centilitres can be reduced one-half in half an hour.

London Times and Hospital Gazette.

DIET FOR ALBUMINURIA.

Don't eat starchy foods at the expense of the albumins. Albumin must be supplied in a mild degree or serious trouble will arise. The kidneys will excrete albumin in spite of a non-albuminous diet.

Milk and whole wheat bread should form the bulk of the diet. Take also sub-acid fruits, as apples, bananas, figs and dates. Green vegetables, as spinach, celery, lettuce and occasionally a baked sweet or white potato. Boiled rice, macaroni and tomato sauce. Fish may occasionally be used. Avoid red meats and eggs.

Mrs. Rorer in Household News.

DIET FOR HABITUAL CONSTIPATION.

Give up all cereals and use hard, twice-baked whole wheat bread. Steamed figs once a day. Baked apples once a day. A salad for dinner every day. Brown bread made with Indian meal, coarse rye and whole wheat, with chopped raisins. Red meats such as mutton, beef and game.

Mrs. Rorer in Household News.

HINTS FOR THE HOUSEHOLD.

Transparent paper for copying drawings or needlework designs may easily be made by placing a sheet of paper over the drawing and rubbing it lightly with pure benzine. The tracing can then be made, and the benzine evaporating leaves the paper opaque as before.

* * *

Saturate the earth around house plants every day with the coffee left over from breakfast. It stimulates them. Plants that have a red or purple blossom will be rendered extremely brilliant in color by covering the earth in their pots with about half an inch of pulverized charcoal. A yellow flower will not be affected in any way by the use of charcoal.

* * *

There is a general opinion that few people, especially among the young, have enough sleep. A famous German physician says that every one up to the age of 21 should sleep for nine hours out of the twenty-four. In middle life people who can perform ordinary routine work when they are half awake may suffer no harm for a time with six hours' sleep, but all who use their brains should have at least eight hours.

* * *

Stains of rust may be removed from fine linen and similar fabrics without injury to the material. The articles must be first well soaped as if they were to be washed in the ordinary way. An iron is heated, and on this is laid a wet cloth. When the heat makes the cloth steam the rust stain is laid on it, and a little oxalic acid is rubbed on with the finger. The heat and the moisture hasten the effect of the acid on the rust, and

when this has disappeared the soaping and washing may be continued.

* * *

Excellent waterproof paper for packing may be made of old newspapers. A mixture is made of copal varnish, boiled linseed oil, and turpentine, in equal parts. It is painted on the paper with a flat varnish brush, and the sheets are laid one side until dry. This paper has been very successfully used for packing plants for sending long distances.

FOR FROST-BITTEN HANDS.

Bathe the hands in a decoction of walnut leaves, dry them and rub them with strong tincture of camphor; then dust them with the following powder: Bismuth salicylate, 150 grains; starch, 2 1-2 ounces. For allaying the itching at night, a mixture of 1 1-2 grains each of rosewater and tannin, and 1 1-4 ounces of glycerine should be rubbed on the hands, this is to be followed by the use of the powder. If the hands are ulcerated, they should be wrapped in walnut leaves, softened in hot water. Another remedy, the efficacy of which has often been witnessed, is 3 ounces of fir balsam and 15 drops of hydrochloric acid. This should be applied to the affected parts twice a day.

New York Medical Journal.

HOW WASTE OCCURS IN THE KITCHEN.

In cooking meats the water is thrown away without removing the grease, or the grease from the dripping pan is thrown away.

Scraps of meat are thrown away.

Cold potatoes are left to sour and spoil.

Dried fruits are not looked after and become wormy.

Vinegar and sauce are left standing in tin.

Apples are left to decay for want of sorting over.

The tea canister and coffee box are left open.

Bones of meat and the carcass of turkey are thrown away, when they could be used in making good soups.

Sugars, tea, coffee and rice are carelessly spilled in handling.

Soap is left to dissolve and waste in water.

Dish towels are used for dish cloths, napkins for dish towels, and towels for holders.

Brooms and mops are not hung up.

More coal is burned than necessary by not closing dampers when the fire is not used.

Lights are left burning when not in use.

Tin dishes are not properly cleaned and dried.

Good new brooms are used to scrub kitchen floors.

Silver spoons are used in scraping kettles.

Mustard is left to spoil in the cruse.

Vinegar is left to stand until the tin vessel becomes corroded and spoiled.

Pickles become spoiled by the leaking out or evaporation of the vinegar.

Pork spoils for want of salt, and beef because the brine needs scalding.

Cheese is allowed to mold or be nibbled by mice.

Woodenware is unscalded and left to warp and crack.

These may seem small leaks, but in the aggregate the loss is considerable.—The Chef.